In the Claims:

Please amend the claims as indicated below.

1. (Currently Amended) A cable modem system comprising:

a data networking engine <u>implemented in a first circuit that includes at least one</u> <u>processor, the data networking engine programmed with software that when executed by</u> <u>the at least one processor of the first circuit causes the data networking engine to perform</u> ~~that performs~~ home ~~data~~ networking functions <u>including interfacing with customer</u> <u>provided equipment</u>; ~~and~~

a cable modem engine <u>implemented in a second circuit that includes at least one</u> <u>processor, the second circuit being separate from the first circuit, the cable modem engine</u> <u>programmed with software that when executed by the at least one processor of the second</u> <u>circuit causes the cable mode engine to perform</u> ~~that performs all other~~ cable modem functions <u>other than the home networking functions performed by the data networking</u> <u>engine, the cable modem engine configured to enable upgrades to its software in a</u> <u>manner that is independent of upgrades to the software of the data networking engine;</u> <u>and</u>

<u>a data bus that connects the data networking engine to the cable modem engine,</u> <u>wherein the cable modem functions performed by</u> the cable modem engine <u>are</u> ~~being~~ completely partitioned from <u>the home networking functions performed by</u> the data networking engine.

2. (Original) A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.

3. (Original) A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.

4. (Currently Amended) A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine <u>configured to perform</u> ~~that performs~~ all crypto functions <u>for both the data networking engine and the cable modem engine, the advanced</u> <u>crypto engine being separate from both the data networking engine and the cable modem</u>

engine.

5. (Currently Amended) A cable modem system as claimed in claim 1, wherein the cable modem engine includes comprises:

    a DOCSIS PHY layer;

    a DOCSIS MAC processor; and

    a DOCSIS controller, and

wherein the at least one processor of the data networking engine is a RISC processor.

6. (Currently Amended) A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer includes comprises a hardware transmitter and receiver.

7. (Currently Amended) A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor is configured to process processes downstream PDU packets and forward forwards the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. (Original) A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. (Original) A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. (Currently Amended) A cable modem system as claimed in claim 5, wherein the data networking engine is configured to perform responsible for all data networking processing including advanced multi-port bridging briding/routing with NAT/firewall and VPN, and home networking applications.

11. (Original) A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. (Currently Amended) A cable modem architecture comprising:

a cable modem engine that includes comprises:

a DOCSIS PHY layer comprising a transmitter and receiver;

a DOCSIS MAC processor configured to implement that implements real-time critical MAC functions for both upstream and downstream communications; and

a DOCSIS controller configured to implement implementing VoIP functionality; and

a data networking engine that includes a RISC processor configured to implement implementing all data networking processing and home networking applications, wherein the implementation of the data networking processing and home networking applications by the data networking engine is completely decoupled from the implementation of the MAC functions and the VoIP functionality by the cable modem engine.

13. (Currently Amended) A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller is configured to provide provides VoIP functionality in accordance with the PacketCable specification, and wherein the data networking engine is configured to provide provides the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality is provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. (Original) A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. (Original) A method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine; and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. (New) A cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.